

CLAIMS

What is claimed is:

1. An apparatus comprising:
 - 5 an impedance plane defining an elongated strip, said impedance plane comprising a magnetic conductor within at least a particular frequency band; and
 - a sector antenna coupled to one side of the impedance plane, said sector antenna having a planar form factor with dimensions contained within the elongated strip, and said sector antenna having a radiation pattern in the particular frequency
 - 10 band that is flared out from the impedance plane at a particular angle.
2. The apparatus of claim 1 further comprising:
 - a conductor plane coupled to the impedance plane on a side opposite the sector antenna, said impedance plane to suppress surface currents between the
 - 15 sector antenna and the conductor plane.
3. The apparatus of claim 2 wherein the conductor plane comprises a metal housing.
- 20 4. The apparatus of claim 3 wherein the metal housing comprises a housing for one of a notebook computer and a tablet computer.
5. The apparatus of claim 1 wherein the sector antenna comprises a plurality of short elements arranged in parallel to one another, and perpendicular to a common
- 25 axis, said common axis being parallel to a long dimension of the impedance plane.
6. The apparatus of claim 1 wherein the sector antenna comprises a Yagi-type antenna.
- 30 7. The apparatus of claim 1 wherein the impedance plane comprises an Artificial Magnetic Conductor (AMC).

8. The apparatus of claim 1 wherein the particular angle is between 35 and 60 degrees.

5 9. The apparatus of claim 1 wherein the particular frequency band comprises a first frequency band, said impedance plane further comprising a magnetic conductor within a second frequency band, said sector antenna having radiation patterns that flare out from the impedance plane in both the first and second frequency bands.

10 10. The apparatus of claim 1 further comprising:

a plurality of additional impedance planes, each of the plurality of additional impedance planes defining an elongated strip, and comprising a magnetic conductor within at least a particular frequency band; and

a plurality of additional sector antennas each coupled to one side of a
15 respective one of the plurality of additional impedance planes, each of the plurality of additional sector antennas having a planar form factor with dimensions contained within the respective elongated strip, having a radiation pattern in the respective particular frequency band that is flared out from the respective impedance plane at a particular angle.

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11. The apparatus of claim 10 wherein the impedance plane and the plurality of additional impedance planes together comprise four impedance planes.

12. The apparatus of claim 11 wherein the impedance planes are coupled in pairs
25 to opposites sides of a host device, and the radiation patterns from each pair are arranged in opposite orientations.

13. A system comprising:
30 a computer; and

a plurality of sector antenna units coupled to the computer, each of the sector antenna units comprising

an impedance plane defining an elongated strip, said impedance plane comprising a magnetic conductor within at least a particular frequency band, and

5 a sector antenna coupled to one side of the impedance plane, said sector antenna having a planar form factor with dimensions contained within the elongated strip, and said sector antenna having a radiation pattern in the particular frequency band that is flared out from the impedance plane at a particular angle.

10 14. The apparatus of claim 13 wherein the computer comprises one of a notebook computer and a tablet computer.

15 15. The apparatus of claim 13 wherein the computer comprises a metal housing coupled to the plurality of sector antenna units on a side of each respective impedance plane opposite the respective sector antennas.

16. The apparatus of claim 13 further comprising a plurality of mounting locations on the computer corresponding to the plurality of sector antenna units.

20 17. The apparatus of claim 16 wherein the plurality of mounting locations comprise two locations on each of two opposite edges of the computer.

18. The apparatus of claim 17 wherein the two opposite edges comprise opposite edges of a lid of the computer.

25 19. The apparatus of claim 18 wherein, on each of the opposite edges of the lid, two of the sector antenna units are coupled with their respective radiation patterns arranged in opposite orientations.

30 20. The apparatus of claim 13 wherein each of the impedance planes comprises an Artificial Magnetic Conductor (AMC).

21. The apparatus of claim 13 wherein each of the sector antennas comprises a Yagi-type antenna.

5 22. The apparatus of claim 13 wherein at least one of the radiation patterns comprises an azimuth of greater than or equal to 90 degrees.

23. An apparatus comprising:

10 a first sector antenna coupled flush with a first edge of a host device through a first artificial magnetic conductor (AMC) strip, said first sector antenna having a first radiation pattern flared up from the first edge of the host device in a first orientation;

a second sector antenna coupled flush with the first edge of the host device
15 through a second AMC strip, said second sector antenna having a second radiation pattern flared up from the first edge of the host device in a second orientation;

a third sector antenna coupled flush with a second edge of the host device through a third AMC strip, said third sector antenna having a third radiation pattern flared up from the second edge of the host device in a third orientation; and

20 a fourth sector antenna coupled flush with the second edge of the host device through a fourth AMC strip, said fourth sector antenna having a fourth radiation pattern flared up from the second edge of the host device in a fourth orientation.

24. The apparatus of claim 23 wherein the first radiation pattern, the second
25 radiation pattern, the third radiation pattern, and the fourth radiation pattern collectively cover 360 degrees of azimuth around the host device.

25. The apparatus of claim 23 wherein at least one of the first sector antenna, the second sector antenna, the third sector antenna, and the fourth sector antenna
30 comprise a Yagi-type antenna.